

ATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

To:

Assistant Commissioner for Patents
United States Patent and Trademark
Office
Box PCT
Washington, D.C.20231
ÉTATS-UNIS D'AMÉRIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 16 August 1999 (16.08.99)	
International application No. PCT/EP98/07556	Applicant's or agent's file reference PETR/NS/4044
International filing date (day/month/year) 23 November 1998 (23.11.98)	Priority date (day/month/year) 27 November 1997 (27.11.97)
Applicant ALPINI, Edilio, Livio	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:
14 June 1999 (14.06.99)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was

☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

<p>The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland</p> <p>Facsimile No.: (41-22) 740.14.35</p>	<p>Authorized officer</p> <p>Jean-Marie McAdams</p> <p>Telephone No.: (41-22) 338.83.38</p>
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PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference PETR/NS/4044	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/EP 98/ 07556	International filing date (day/month/year) 23/11/1998	(Earliest) Priority Date (day/month/year) 27/11/1997
Applicant ALPINI, Edilio, Livio		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☒ because this figure better characterizes the invention.

1,5

☐ None of the figures.

A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 A41D13/00 G21F3/02 H05K9/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 A41D A42B G21F H05K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y,P	PATENT ABSTRACTS OF JAPAN vol. 098, no. 013, 30 November 1998 & JP 10 226908 A (BLUE LOCK:KK), 25 August 1998 see abstract ---	1
Y	US 5 073 984 A (NISSHINBO INDUSTRIES INC.) 24 December 1991	1
A	see column 3, line 6 - column 4, line 25; claims 1,2,6,8; figures 1-7B ---	9,11
A,P	DE 196 33 315 A (W. AHRENS) 26 February 1998 see column 1, line 20 - column 2, line 44; figures 1-4 ---	1,11
A	DE 296 12 459 U (A. LANGE) 17 October 1996 see the whole document ---	1
-/--		



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

° Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

19 March 1999

Date of mailing of the international search report

26/03/1999

Name and mailing address of the ISA

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Authorized officer

Garnier, F

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	FR 2 745 690 A (EGIS S.A.R.L.) 12 September 1997 see page 2, line 1 - page 3, line 17; claim 1 -----	1
A	WO 97 15931 A (VIGNUDELLI A.) 1 May 1997 see page 3, line 20 - page 5, line 2; claims 1,2; figures 1-6 -----	1-3

INTERNATIONAL SEARCH REPORT

International Application No

Information on patent family members

PCT/EP 98/07556

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5073984	A	24-12-1991	KR 9709623 B	17-06-1997
DE 19633315	A	26-02-1998	NONE	
DE 29612459	U	17-10-1996	NONE	
FR 2745690	A	12-09-1997	NONE	
WO 9715931	A	01-05-1997	IT 80950509 A	28-04-1997
			AU 7332396 A	15-05-1997
			EP 0857347 A	12-08-1998

PATENT COOPERATION TREATY


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REC'D 13 SEP 1999

WIPO PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PETR/NS/4044		FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/EP98/07556	International filing date (day/month/year) 23/11/1998	Priority date (day/month/year) 27/11/1997	
International Patent Classification (IPC) or national classification and IPC A41D13/00			
Applicant ALPINI, Edilio, Livio			
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of sheets.</p>			
<p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the report</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input checked="" type="checkbox"/> Certain documents cited</p> <p>VII <input checked="" type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p>			
Date of submission of the demand 14/06/1999		Date of completion of this report 08.09.99	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized officer Poalas, K Telephone No. +49 89 2399 2066	



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/EP98/07556

I. Basis of the report

1. This report has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

Description, pages:

1-5 as originally filed

Claims, No.:

1-12 as originally filed

Drawings, sheets:

1/3-3/3 as originally filed

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/EP98/07556

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-12
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-12
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-12
	No:	Claims	

2. Citations and explanations

see separate sheet

VI. Certain documents cited

1. Certain published documents (Rule 70.10)

and / or

2. Non-written disclosures (Rule 70.9)

see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Ad section V

Claim 1

US-A-5 073 984 discloses an electromagnetic field deflecting garment consisting of a conducting fabric.

It is the object of the present application to provide an electromagnetic field deflecting garment which deflects effectively electromagnetic radiation.

This object is achieved through an electromagnetic field deflecting garment according to claim 1, having a conducting fabric connected to an electronic circuit able to dispel the electromagnetic signal coming from said garment through a Joule effect.

None of the documents of the international search report discloses a garment consisting of a conducting fabric connected to such an electronic circuit according to claim 1. Also a combination of the teachings of said documents does not render obvious such a garment.

Claim 1 therefore fulfils the requirements of Articles 33(2) and 33(3) PCT.

Claims 2 to 12

Claims 2 to 12, disclosing modifications of the inventive idea embodied in claim 1, also meet the requirements of Articles 33(2) and 33(3) PCT.

Ad section VI

PATENT ABSTRACTS OF JAPAN vol. 098, no. 013, 30 November 1998 & JP 10 226908 A (BLUE LOCK:KK) filed on 12.02.1997 and published on 25.08.1998

Ad section VII

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/EP98/07556

Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the document US-A-5 073 984 is not mentioned in the description, nor is this document identified therein.

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
7 December 2000 (07.12.2000)

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(10) International Publication Number
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A41D 13/00, D03D 15/02

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(81) Designated States (national): AE, AG, AL, AM, AT, AU,
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DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU,
ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS,
LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO,
NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR,
TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

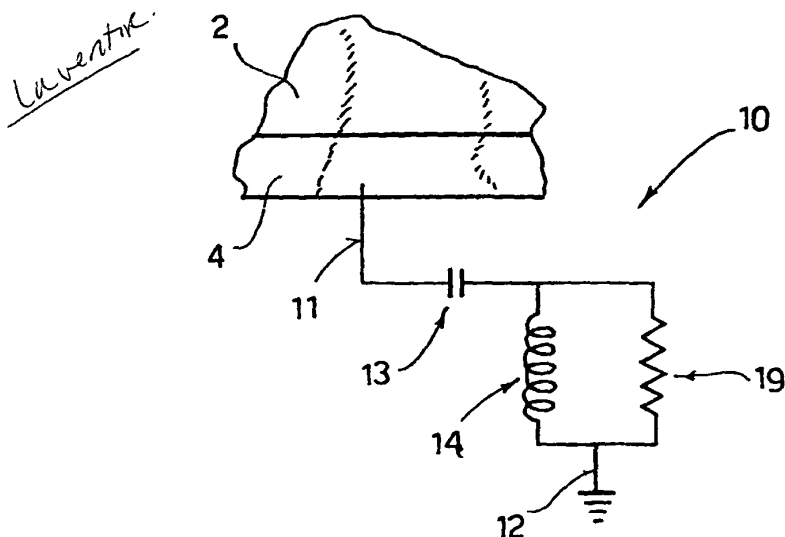
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patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European
patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE,
IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG,
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Published:

- With international search report.
- Before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments.

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: ARTICLE FOR DEFLECTING ELECTROMAGNETIC FIELDS



(57) Abstract: An article for deflecting electromagnetic fields consisting of a conductive meshed dry fabric (2) with conductive filaments (3) parallel to one another, bordered by a conductive fabric (4) having a grid of filaments (5) arranged in criss-cross fashion, there being connected to said fabric (4) an electrical circuit (10) designed to dissipate, by the Joule effect, the electromagnetic signal coming from the article.

WO 00/74461 A1

ARTICLE FOR DEFLECTING ELECTROMAGNETIC FIELDS

DESCRIPTION

The subject of the present invention is an article capable of deflecting electromagnetic fields coming from external sources. In particular, it refers to a fabric which, associated to an electronic circuit, is able to suppress and deflect electromagnetic fields in the surrounding environment. This type of fabric, associated to the electronic circuit, is particularly suitable for the production of articles commonly used in the domestic sphere, such as blankets for beds, tablecloths, carpets and curtains, as well as fabric for upholstery and furnishings, such as for picture frames, sofas, armchairs, and the like.

The need to produce this type of fabric has arisen recently precisely because the amount of electromagnetic waves to which the human body is subjected has increased considerably.

In the domestic sphere we are continuously bombarded by electromagnetic fields coming from radio transmitters and receivers, which spread electromagnetic waves in the radio-frequency range, from liquid-crystal displays of various kinds of electronic equipment, and above all from the phosphors of television screens or from computer monitors which transmit electromagnetic waves at a frequency concentrated in the 16-100 kHz frequency range.

In addition, frequently houses are built near high-tension lines supplying electric power, which emit electromagnetic radiation.

Furthermore, there has recently been a marked reinforcement of the GSM network for cell telephones; as a result, the use of cellphones has spread considerably also in the household environment, and this too is a source of emission of electromagnetic waves, in the 900-1800 MHz frequency range.

Recent medical studies have demonstrated that any charge of an electric or electromagnetic nature absorbed by the human body is prejudicial to the cellular balance of the chondriome. The chondriome is a cell apparatus consisting of the complex of chondriosomes, which are corpuscles that are found in the cytoplasm of most cells in the form of grains, filaments and rods and are thought to function in physiology of the cell.

Initially, our organism reacts by compensating for the cellular imbalance in the chondriome caused by electromagnetic radiation, but in the long run this imbalance is no longer compensated for, and this causes poor cell physiology with consequent harmful effects on human health.

5

The patent application MI97A 0026384 filed by the present applicant, as yet not published, describes a garment for deflecting electromagnetic fields, which has the purpose of protecting the user from the electromagnetic fields surrounding him. The above application, however, is limited only to a garment that can be worn by the user.

10

The purpose of the invention is to overcome such drawbacks by providing an article which is easy to make and is able to deflect and absorb the electromagnetic fields present in an environment.

15

This purpose is achieved, in accordance with the invention, by means of an article having the characteristics listed in the annexed independent claim 1.

Preferred embodiments of the invention appear from the dependent claims.

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After repeated tests, the inventor has found that the fabric used for the garment of the patent application MI97A 0026384, connected to an appropriate electronic circuit, could be used for the production of articles of everyday household use for the suppression, deflection, absorption and abatement of the electromagnetic fields present in an environment. Consequently, it was possible to obtain a purification of the premises in

25

which the above tests were conducted.

The article according to the invention is obtained by means of a meshed conductive fabric connected to an electronic circuit. Said conductive fabric absorbs electromagnetic fields and conveys them towards the electronic circuit, where they are dissipated by the

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Joule effect. The article can act as a sort of Faraday cage by discharging the electromagnetic signal to earth. Clearly, the earth is to be understood as a virtual earth, since earthing of the circuit is achieved by means of its connection to a strip made of conductive material, functioning as a dissipator.

35

As electronic circuit any parallel resonator may be used.

A detector of electromagnetic fields may be connected to the electronic circuit, which signals, by means of a LED, the presence of electromagnetic fields in the environment. In this way, the user knows when the article according to the invention is absorbing and deflecting an electromagnetic field.

5

Further characteristics of the invention will emerge more clearly from the ensuing detailed description, which refers to embodiments given purely to provide non-limiting examples, illustrated in the attached drawings, in which:

10 Fig. 1 shows a plan view of a blanket according to the invention;

Fig. 2 shows a plan view of a detail of a fabric of the blanket of Fig. 1;

15 Fig. 3 shows a plan view of a detail of the weft of the border of the blanket illustrated in Fig. 1;

Fig. 4 shows the electric diagram of an electronic circuit according to the invention;

20 Fig. 5 shows a schematic view of an anechoic chamber for measuring attenuation of the electromagnetic field performed on the article according to the invention at a frequency in the 30-100 MHz range;

25 Fig. 5A shows a schematic view of a semi-anechoic chamber for measuring attenuation of the electromagnetic field performed on the article according to the invention at a frequency in the 1-2 GHz range;

Figs. 6-9 show diagrams of percentage attenuation of the electromagnetic field in the 30-100 MHz frequency range;

30 Figs. 10 and 11 show diagrams of electromagnetic field in the 1-2 GHz frequency range;

Figs. 12 and 13 show diagrams of percentage attenuation of the electromagnetic field in the 1-2 GHz frequency range.

35 The article according to the invention will now be described with the aid of the above figures.

Purely to provide an example, reference is made to a blanket 1 that deflects electromagnetic fields, the blanket 1 consisting of a conductive, meshed, dry fabric 2. Interwoven in the weft of said fabric 2 are parallel filaments 3 made of conductive material, which preferably may be tungsten and carbon. Said filaments 3 are able to
5 conduct the electromagnetic fields that concentrate on the blanket 1.

The perimeter of the blanket 1 is bordered by a fabric 4 with a criss-cross grid. The fabric 4 has a criss-cross grid of filaments 5, and these filaments 5 must be made of conductive material, preferably tungsten and carbon. The meshed fabric 4 is arranged on the border
10 of the blanket 1 and is folded back, the said meshed fabric 4 having a weft that is thicker and more closely knit than the fabric 2 and having the function of closing the conductive circuit created in the blanket 1.

In the area of said border, the blanket 1 may be covered with a material which may even
15 not be conductive; purely as an example, wool can be used as material for covering the border.

An electronic circuit 10 is connected by means of a conductor wire 11 to the fabric 4 bordering the blanket 1. Earthing of the circuit is obtained by means of a strip 12 made of
20 conductive material, preferably copper. The strip 12 hangs from the blanket 1, so as to be able to discharge the electromagnetic field present on the blanket. The circuit 10 can be positioned in a special housing made inside the blanket 1 so as not to be visible.

Also connected to the border 4 of the blanket there is provided a detector 20 of
25 electromagnetic fields. The detector 20 may be a solid-state detector of the type readily available commercially. The detector 20 is connected to a light source 21, for instance a LED, for emitting a light signal when the blanket 1 is absorbing an electromagnetic field. Instead of the LED 1 it is also clearly possible to provide an acoustic signalling device.

30 The electronic circuit 10 may be any parallel-resonator circuit with a specific cut-off frequency and frequency of resonance. Said circuit 10 must be able to dissipate, by the Joule effect, the electromagnetic signal coming from the blanket 1 and must be able to cut off the signals above its own cut-off frequency.

35 Fig. 4 shows a possible embodiment of the electrical diagram of the circuit 10. Between the fabric 4 of the border and the parallel-resonator circuit is set a coupling capacitor 13.

The parallel resonator is represented by the connection in parallel of an inductance coil 14 and a resistor 19.

5 The resistor 19 must preferably be selected with a low resistance value, approximately 100 Ω , so that the power dissipated by said resistor 19 is very small, i.e., of the order of nanojoule/s. This leads to a minimal increase in temperature, quantifiable at approximately half a degree centigrade.

10 The coupling capacitor 13 may be selected at a capacitance value of approximately 2 pF. The inductance coil 14 of the parallel resonator may be selected at an inductance value of 10 μ H.

15 The foregoing example of application has been provided for a blanket; it, nevertheless, remains valid also for other articles, such as curtains, carpets, tablecloths, picture frames, and fabrics for upholstery and furnishings in general.

Described below is the experiment for measuring attenuation of the electromagnetic fields acting on the article according to the invention.

20 To prevent possible reflection of the electromagnetic waves, the above experiment was conducted inside an anechoic chamber 50 according to the set-up of Fig. 5. An insulating support 30 was positioned in the anechoic chamber 50, the said support 30 being designed to support the article 1. The support 30 also supported an isotropic detector 32 designed to detect an electric field value. In the anechoic chamber 50, at a distance of one
25 metre from the support 30, an antenna 31 was positioned to irradiate a known electromagnetic field generated by a field generator 33. The generator 33 was a generator of a programmable type generating electric fields in the radiofrequency range.

30 The value of percentage attenuation of the electromagnetic field was obtained applying the formula:

$$\% \text{ Att.} = (1 - (E_f / E_i)) * 100 \quad (1)$$

where E_f is the final electric field value measured by the detector 32 inside the article 1, and E_i is the initial value of the electric field measured by the detector 32 in the absence of the article 1.

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In the 30 MHz to 1 GHz frequency range, the electric field E_i detected by the isotropic

probe 32 positioned in the support 30 without the article 1 was measured.

Subsequently, the electric field E_r detected by the same isotropic probe 32 with the article 1 positioned on the support 30 was measured, keeping the positions of the detector 32 and the antenna 31 and the distance between them unaltered and keeping the same level of irradiated signal.

The tests were repeated with the antenna 31 set both in vertical bias and in horizontal bias; for both biases, the percentage attenuation of the article 1 both on the front side and on the rear side was ascertained.

The values of the electric fields E_i and E_r were measured for discrete frequencies, and applying the formula (1) the graphs of Figs. 6-9 were obtained.

As shown in Figs. 6 and 7, for a vertical bias, both on the front side and on the rear side of the article 1 there is a mean attenuation of approximately 65% with attenuation peaks of approximately 85% in the region of the 244 MHz frequency range.

As shown in Figs. 8 and 9, for a horizontal bias, there is an attenuation of approximately 10 % both on the front side and on the rear side of the article.

To carry out tests in the 1-2 GHz frequency range, the arrangement illustrated in Fig. 5A was used. In this case two microwave antennas were used, one as transmitter 61 and the other as receiver 62, set at the same height and at a distance of one metre apart. A generator 63 of a signal in the microwave range was connected to the transmitter antenna 61 and, by means of a synchronizer 64, was synchronized with the receiver antenna 62. The measurement was performed, positioning the support 30 in a semi-anechoic chamber; instead, the receiver 62 and the transmitter 61 were positioned outside the semi-anechoic chamber.

For a vertical bias of antennas, it was possible to plot a graph of the electric field (expressed in dB μ V) measured by the receiver antenna 62, in the 1-2 GHz frequency range.

Fig. 10 shows the plot of the electric field 80 in the absence of the article 1, and the plot of the electric field 81 attenuated on the front side of the article 1.

Fig. 11 shows the plot of the electric field 80 in the absence of the article 1, and the plot of the electric field 82 attenuated on the rear side of the article 1.

5 Using the values obtainable from the graphs of Figs. 10 and 11, graphs of the percentage attenuation as a function of the frequency were obtained (shown in Figs. 12 and 13).

From the graphs of Figs. 12 and 13, it is possible to deduce that in the 1-2 GHz frequency range, by means of the article according to the invention there is a percentage attenuation of the electromagnetic field of approximately 20 %.

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CLAIMS

1. An article for deflecting electromagnetic fields, characterized in that it comprises a conductive fabric (2), possibly bordered with a closed conductive fabric (4), connected to an electronic circuit (10) designed to dissipate, by the Joule effect, the electromagnetic signal coming from said fabric.
- 5 2. An article according to Claim 1, characterized in that said conductive fabric (2) is a meshed dry fabric with filaments (3) consisting of conductive material, arranged parallel to one another.
- 10 3. An article according to Claim 1, characterized in that said conductive bordering fabric (4) has filaments (5) of conductive material arranged according to a criss-cross grid.
4. An article according to Claim 1, characterized in that said electronic circuit (10) is a parallel resonator with a specific cut-off frequency and a specific frequency of resonance.
- 15 5. An article according to Claim 4, characterized in that said parallel resonator consists of a connection in parallel of an inductance coil (14), and a resistor (19), said parallel resonator being coupled to said conductive fabric (4) by means of a capacitor (13).
- 20 6. An article according to Claim 5, characterized in that the inductance of said inductance coil (14) is approximately 10 μ H, the resistance of said resistor (19) is approximately 100 Ω and the capacitance of said capacitor (13) is approximately 2 pF.
7. An article according to any one of the foregoing claims, characterized in that earthing of the electronic circuit (10) is obtained by means of a strip (12) made of conductive material coming out of said article.
- 25 8. An article according to any one of the foregoing claims, characterized in that connected to said electronic circuit (10) is a detector (20) of electromagnetic fields operating a light source or acoustic source (21) which indicates an absorption of electromagnetic field by the article (1).
- 30 9. An article according to any one of the foregoing claims, characterized in that said article is a blanket (1).

10. An article according to any one of the foregoing claims, characterized in that said article is a fabric to be used as a covering for furnishings in general.

FIG. 1

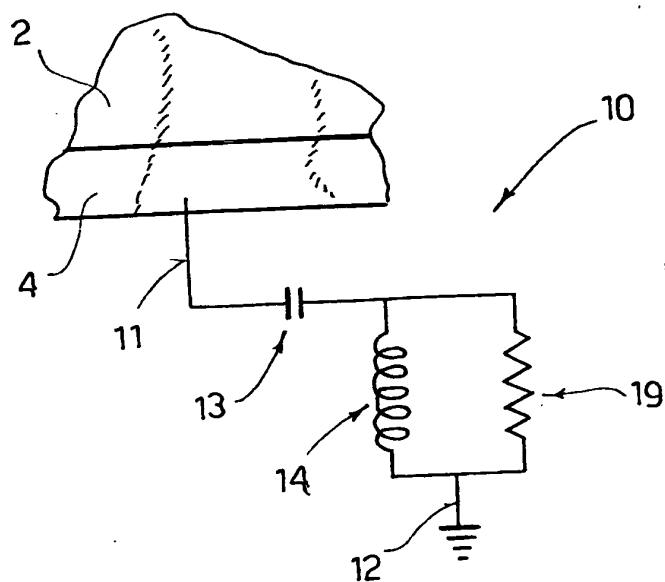
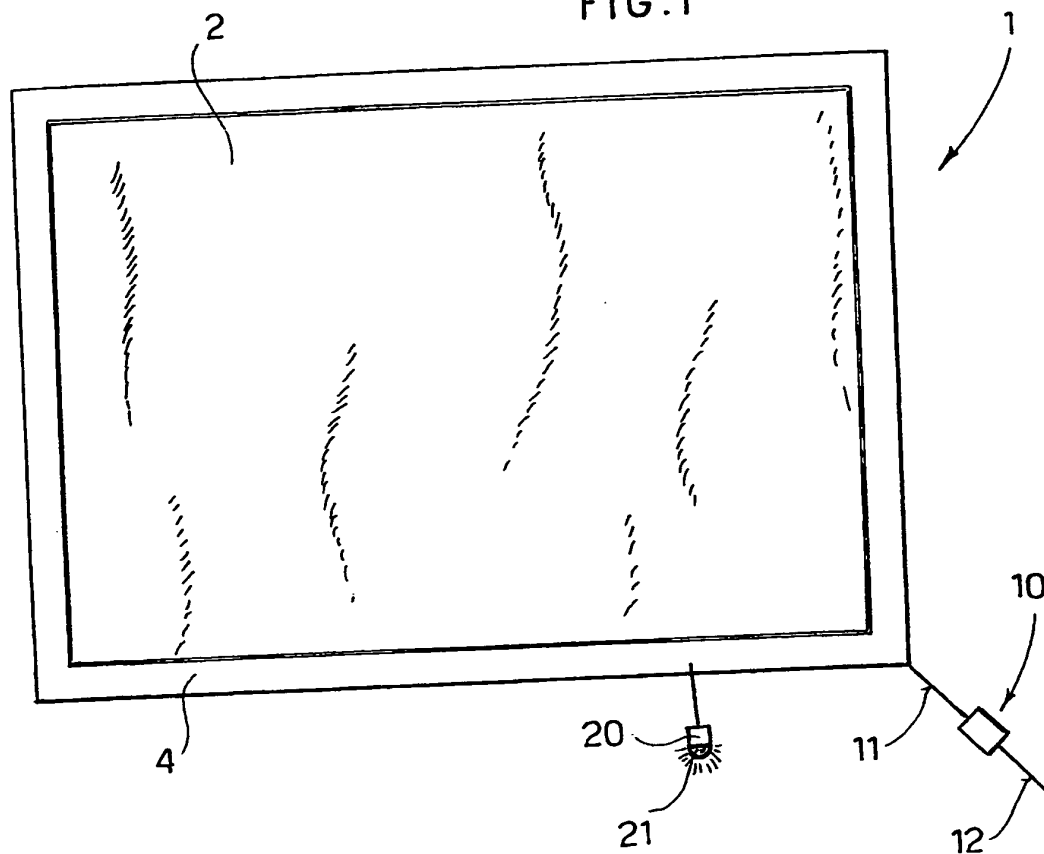


FIG. 4

FIG. 2

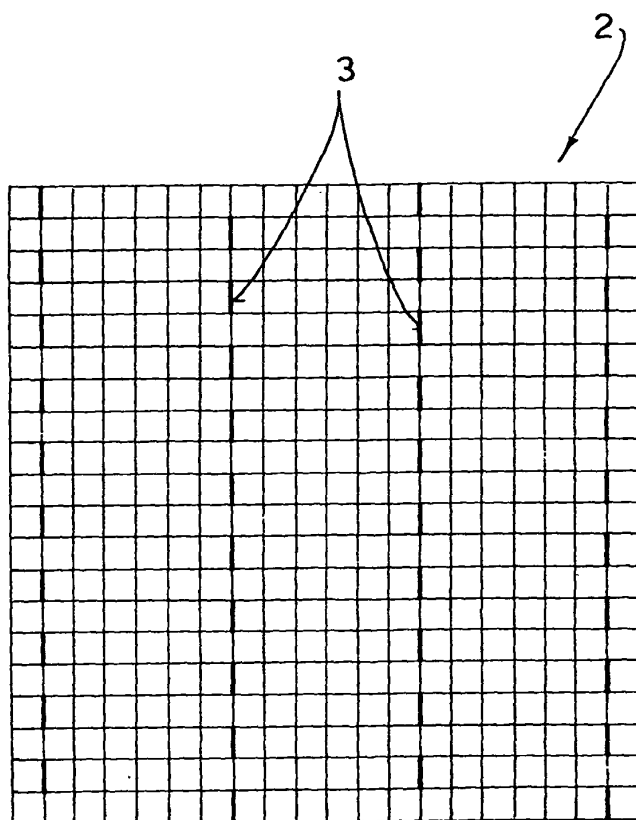
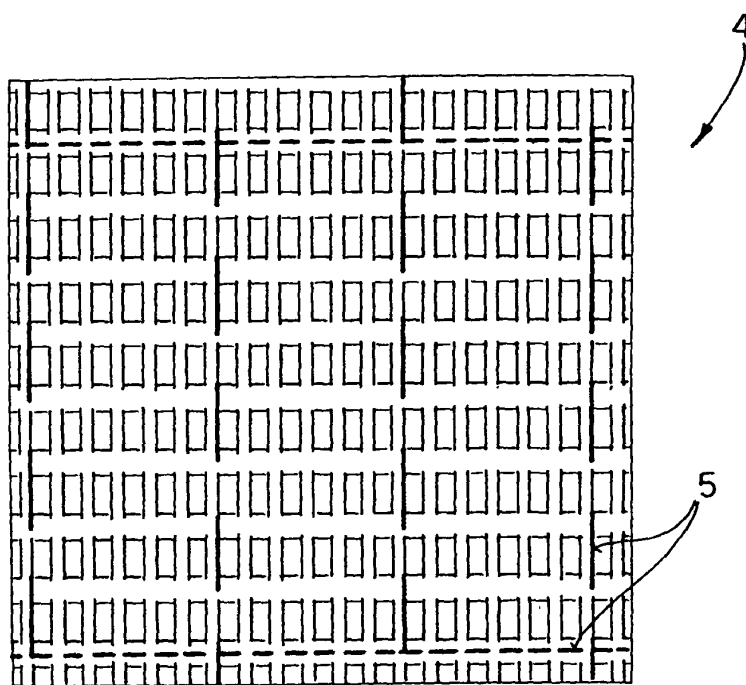


FIG. 3



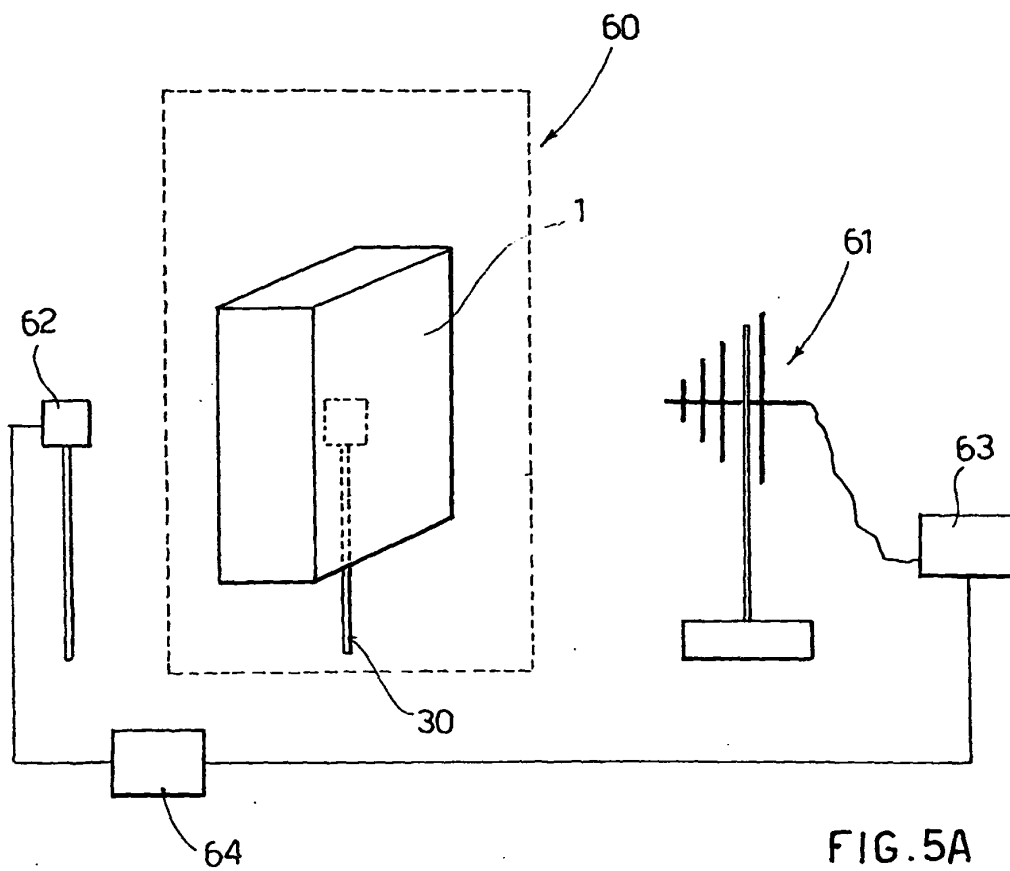
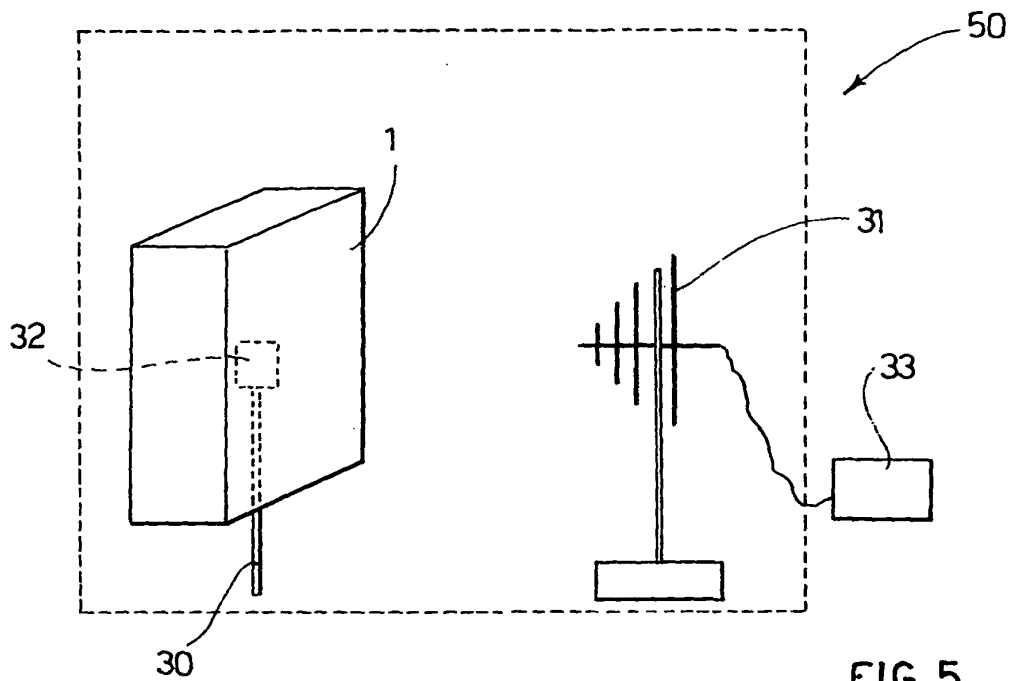


FIG. 6

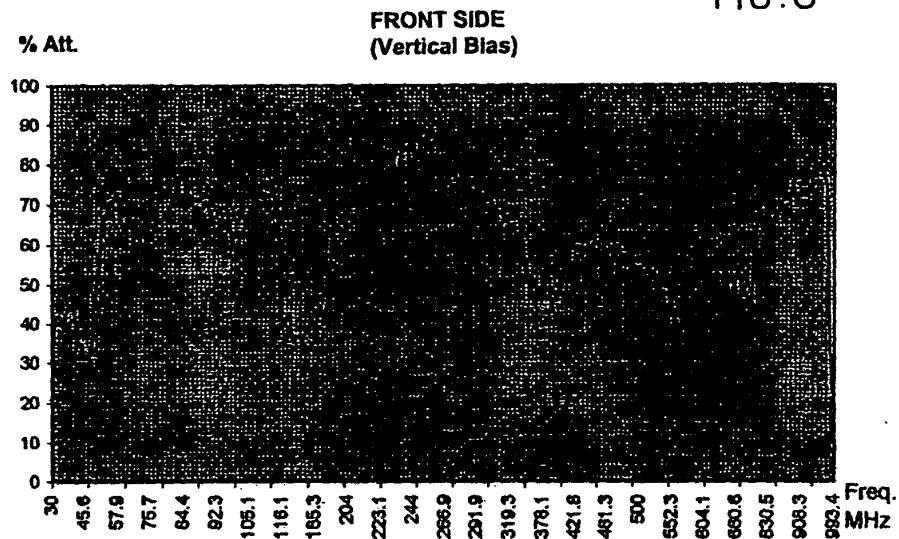


FIG. 7

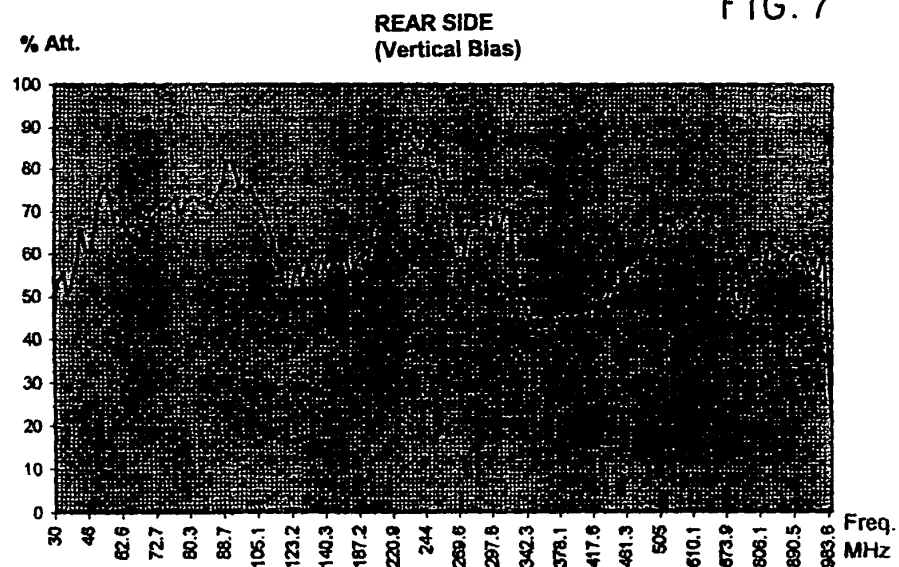


FIG. 8

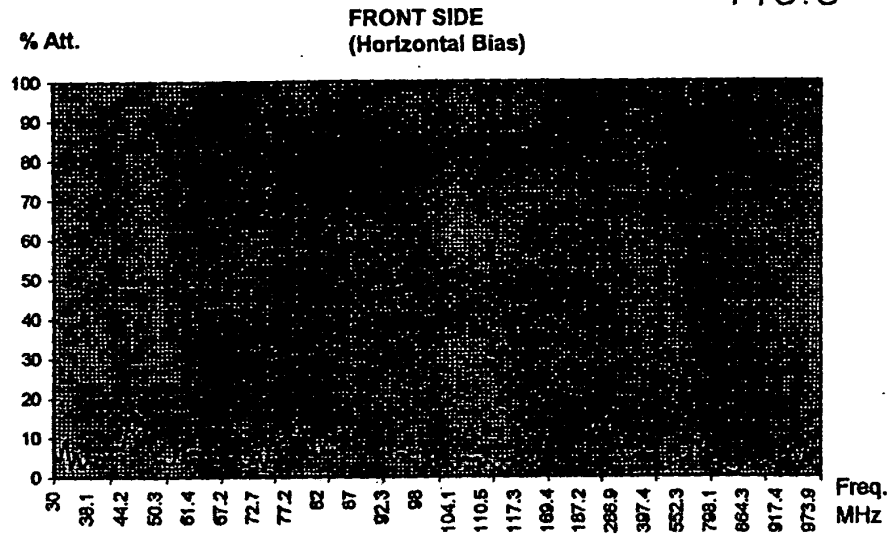


FIG. 9

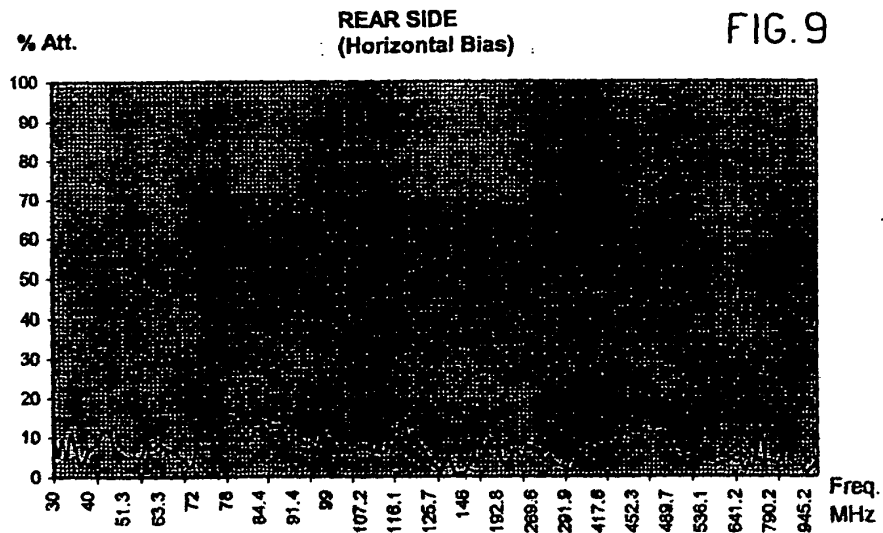


FIG. 10

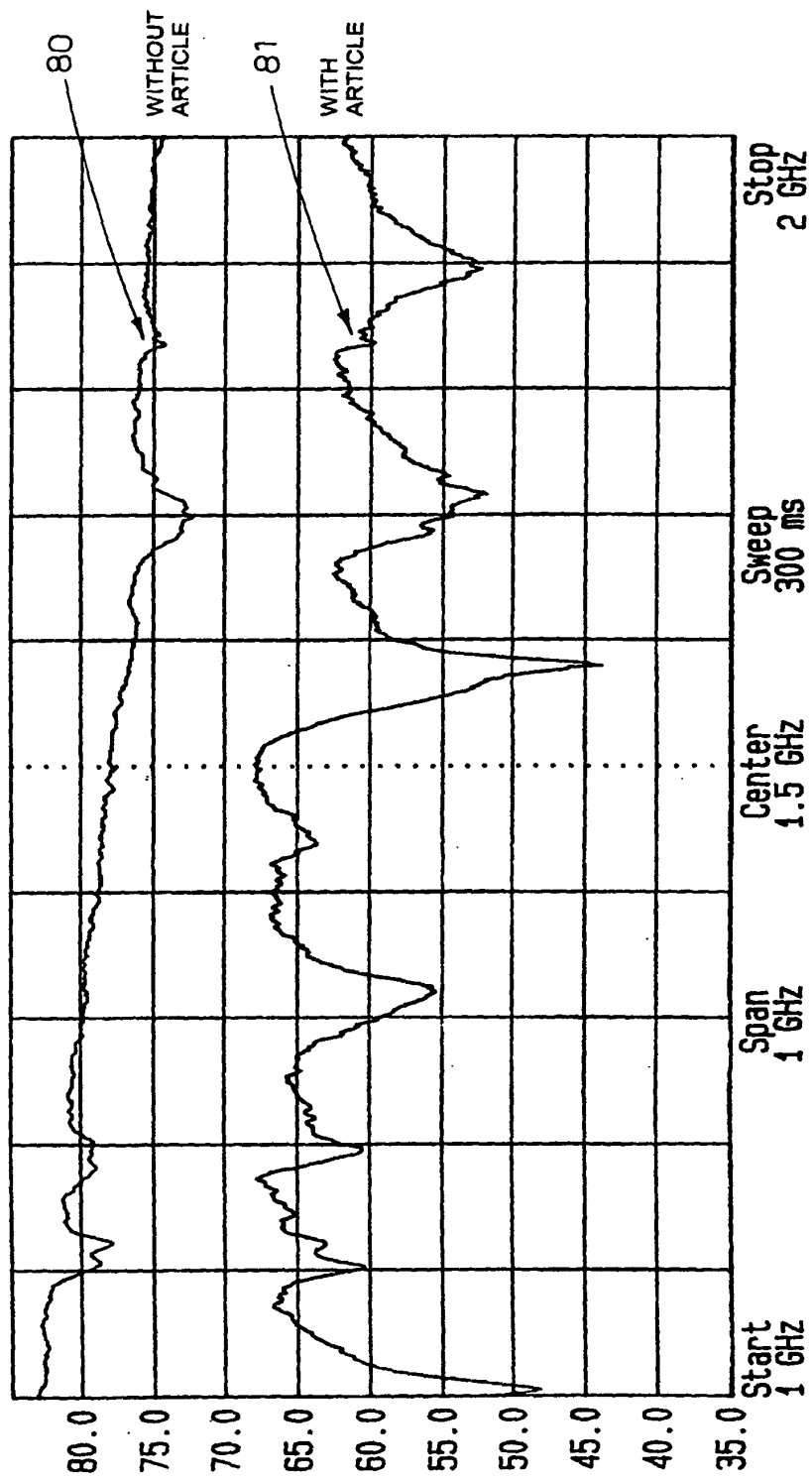


FIG. 11

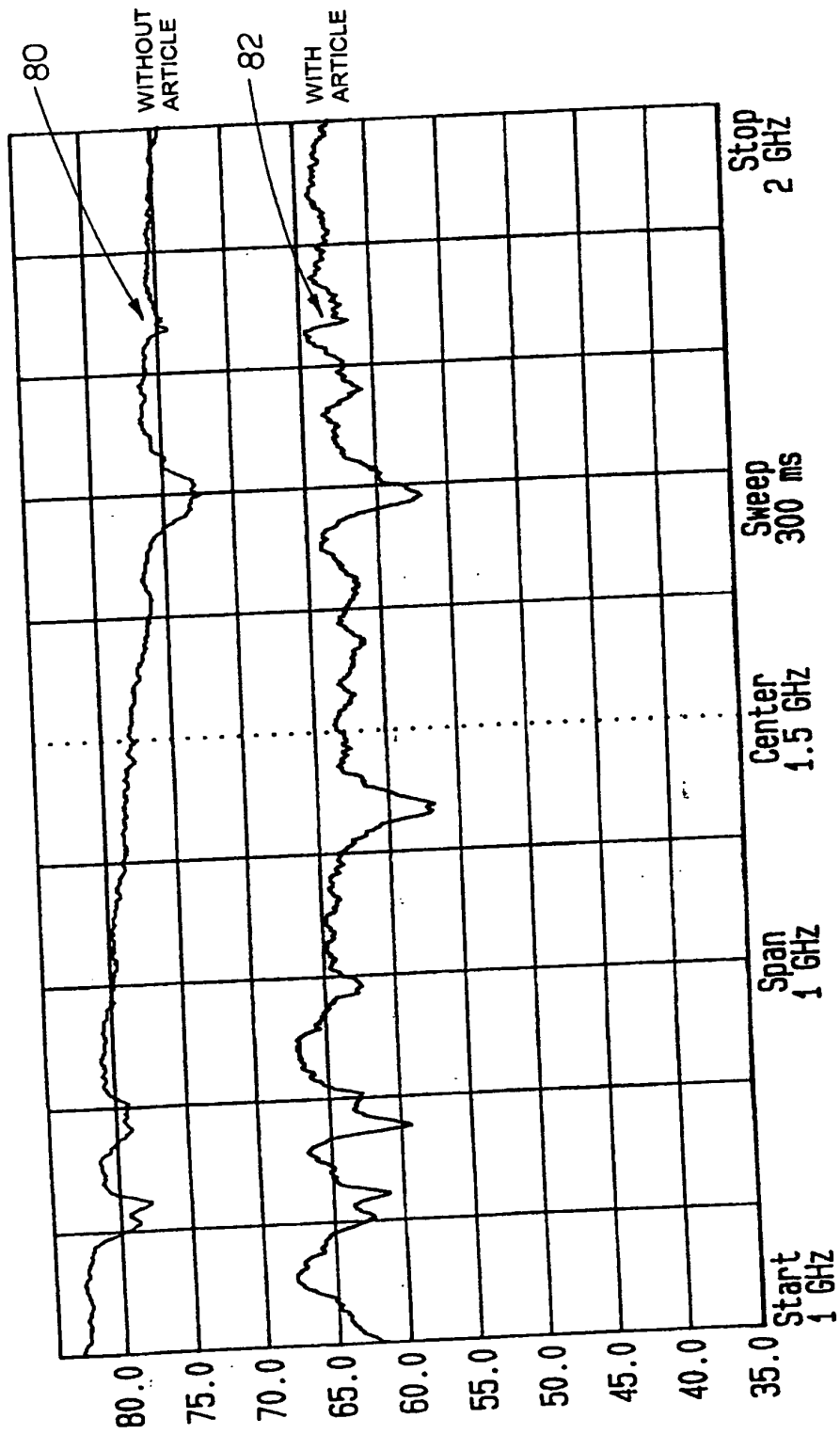


FIG. 12

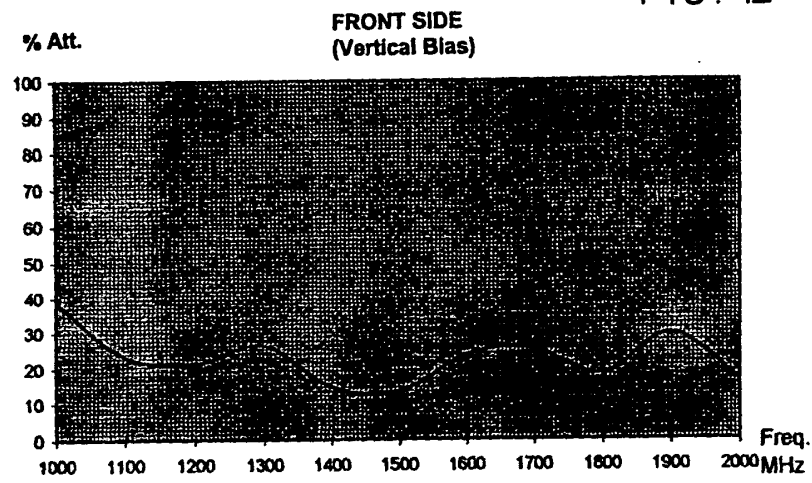
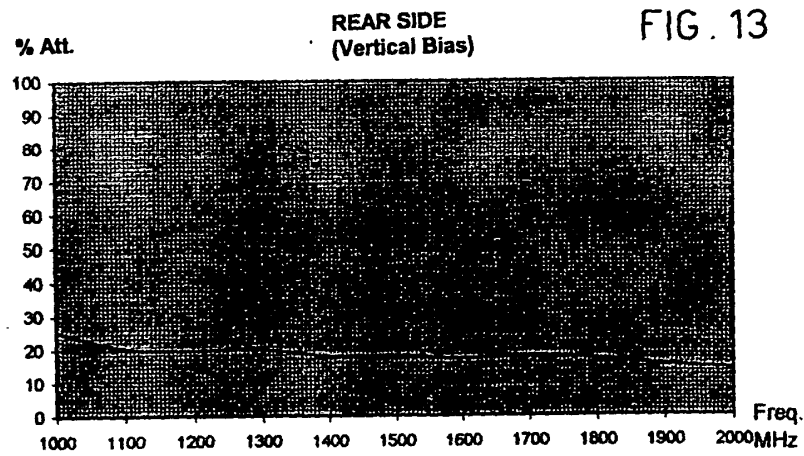


FIG. 13



INTERNATIONAL SEARCH REPORT

International Application No.
PCT/IB 00/00873

A. CLASSIFICATION OF SUBJECT MATTER IPC 7 H05K9/00 A41D13/00 D03D15/02		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) IPC 7 H05K A41D D03D		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal, PAJ, WPI Data		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	WO 99 27807 A (ALPINI EDILIO LIVIO) 10 June 1999 (1999-06-10) cited in the application	1-4,7
A	claims 1-7; figures 3-5	5,6
Y	WO 96 37647 A (CAVI FRANCESCO DE) 28 November 1996 (1996-11-28) * the whole document *	1,2
Y	EP 0 880 311 A (MATSUSHITA ELECTRIC IND CO LTD) 25 November 1998 (1998-11-25)	1,2
A	page 1, line 50-58 page 2, line 5,6 page 5, line 14-26; figure 2	4-6
-/-		
<input checked="" type="checkbox"/> Further documents are listed in the continuation of box C. <input checked="" type="checkbox"/> Patent family members are listed in annex.		
* Special categories of cited documents : "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. "&" document member of the same patent family		
Date of the actual completion of the international search 9 November 2000		Date of mailing of the international search report 16/11/2000
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patenlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016		Authorized officer Schneider, F

INTERNATIONAL SEARCH REPORT

Inter: 1st Application No
PCT/IB 00/00873

C-(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		Relevant to claim No.
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